2. CHARACTERISTICS OF MARYLAND'S HEALTH CARE MARKET PLACE

This chapter provides a framework for evaluating the information on health care spending by Maryland residents that is presented in Chapters 3 and 4. To help readers better understand why the magnitude, pattern, and growth rate of health care spending differ from year to year, information on variables known to influence health care use is presented in this chapter. These influences include residents' characteristics as well as the availability of health care resources and local trends in service utilization. The information includes discussions of how these factors influence health care spending and values of specific measures for most of the factors, with Maryland's latest values contrasted against those of the nation. A review of Maryland's health care ranking among all states closes the chapter.

VARIABLES THAT INFLUENCE HEALTH CARE UTILIZATION

The volume of health care spending for different services in the state is the result of choices made in regional health care markets. Underlying these choices are **demand, supply, and price characteristics** which generally differ from region to region. The demand for health care begins with the patient who must initiate contact with the health care system. Important non-economic factors influencing the patient's behavior include need (health status), demographic and cultural factors (age, gender, race/culture), and personal preferences. Demographic characteristics are often related to need – for example, the greater need for health care among the elderly is due to increased probability of serious illness – but demographic characteristics also influence decisions related to obtaining treatment, e.g., women are more likely to enter the health care system than are men. Important economic factors for the patient include the type and comprehensiveness of health insurance, household income, and the price of services (including alternatives) after insurance. Once a patient makes the choice to access the health care system, a physician or other practitioner generally selects the health services that are actually purchased. The supply of health care providers in a region can limit a patient's choice and thereby impact the care that results. For example, a patient who might prefer acupuncture might have to opt for more traditional treatment if there are no acupuncturists in the region. Also, treatment practices differ across physician specialties (as well as within specialties), with some specialties utilizing more "low technology" treatments compared to other specialties. A practitioner's treatment choices are influenced by training, peer practices, the types of services available to the patient and what the patient is able to afford. Because the type and scope of a patient's insurance coverage tends to define what the patient can afford and, in an economic sense, what is available to the patient, coverage can significantly affect the choice of treatment.

Because all of the above factors interacting with each other influence the choices made in health care markets, identification of the specific causes responsible for geographic differences in health care spending patterns – such as Maryland compared to the U.S. or among regions within Maryland – is a complex problem. It cannot be addressed in aggregate spending and has only been studied for particular services and for specific conditions in restricted patient populations. Therefore, this report does not specify the factors responsible for overall differences in health care spending between Maryland and the U.S., although it does identify possible explanations for some of the differences observed in the next chapter.

COMPARING MARYLAND TO THE NATION

In comparing Maryland health care spending to that of the nation, we would expect to see variation in the levels and patterns of health care spending because of differences in market characteristics known to influence health services utilization, such as those mentioned above. **These influences have been categorized in the following six areas which relate to specific subsections of this chapter:**

- **Population Demographics**
- **Health Status And Lifestyle** – *Smoking; Sexually Transmitted Diseases; Health Status Among Infants*

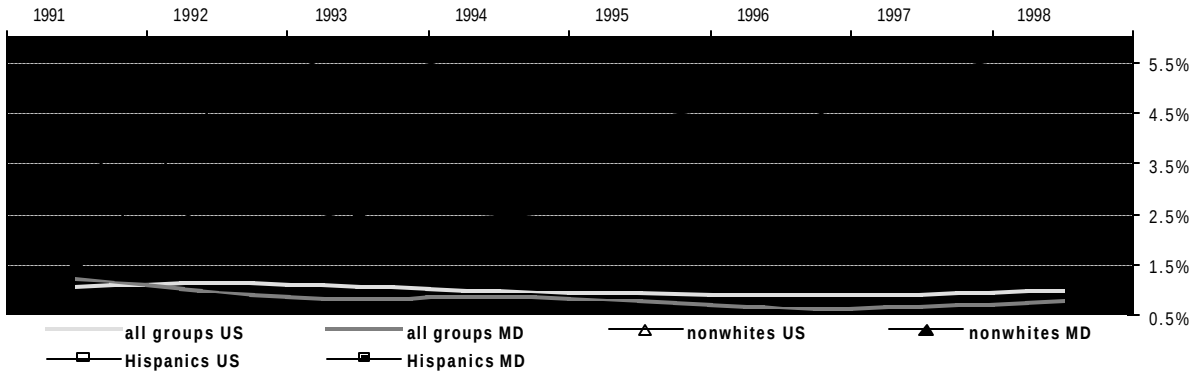
- **Health Care Coverage And Economic Factors** – *Insurance Coverage for Children in Poverty; Trends in HMO Market Share; Factors Associated with Health Insurance Coverage in Non-elderly Adults*
- **Resource Availability**
- **Physician Practice Style**
- **Health Care Prices**

Selected variables for the first four categories are listed in Table 2-1, which compares Maryland data to the U.S. averages. For two of these categories, discussion of information in Table 2-1 is supplemented with additional data on *special topics* (listed above) that are presented at the end of each subsection. **Table 2-1 also includes information on Utilization of Services** that is discussed at the end of this section.

DEMOGRAPHIC DIFFERENCES

The amount and types of health care utilization in a region are influenced by the size and demographic characteristics of its population, including age distribution, rural versus urban residence, and minority status. In 1998, Maryland's population was the eighteenth largest in the nation. However, the state's rate of **population growth** has been slowing – from 1.2 percent in 1991 to 0.8 percent in 1998 – whereas nationally, population growth remained stable at about 1 percent throughout the decade, as shown in Figure 2-1. The proportion of residents residing in metropolitan areas is 14 percent greater in Maryland, with 91.9 percent of state residents living in urban areas compared to 80.7 percent of the country's population. Health spending for **persons in rural areas** tends to be lower overall, with more ambulatory services delivered through hospital outpatient departments compared to their metropolitan counterparts.

Figure 2-1: Population Growth Rates for Maryland and the U.S., Non-Whites & Hispanics, 1991-1998



Health care utilization tends to be the greatest among **the youngest and the oldest.** The relatively higher expenditures for young children result from newborn hospital admissions, the frequency of well-child visits for developmental assessments and immunizations, and visits for common childhood illnesses, such as earaches. In 1998, approximately 6.7 percent of the state population was under the age of 5 compared to 7.0 percent nationally. Both nationally and in Maryland, the population growth rate for children under age 5 declined continuously throughout the early 1990s before accelerating again after 1996. The higher expenditure rates for the elderly result from conditions that are more likely to occur among the elderly: chronic illnesses, co-morbidities and death. For example, elderly people in fair or poor health are more likely to use ambulatory care than any other age group, regardless of health status.[1] About 28 percent of Medicare payments cover the costs of care for beneficiaries in their last year of life, with just about 5 percent of beneficiaries dying annually.[2] Relative to the national average, the proportion of Maryland residents who were

[1] Agency for Health Care Policy and Research. Information at www.meps.ahcpr.gov/papers/99-018/99-0018.htm
[2] Department of Health and Human Services. Information at www.os.dhhs.gov/new/press/pre1995pre/930415.txt

elderly in 1998 was 9 percent smaller, with 11.5 percent of the state population aged 65 or older. Nationally, this demographic group comprises 12.7 percent of the population.

Racial and ethnic factors play an important role in the utilization of health care through cultural differences in lifestyle and interactions with the health care system as well as genetic differences that affect health status. The state's minority population (non-whites and Hispanics) percentage exceeds the nation's by 27 percent. Minorities comprise close to 35 percent of Maryland residents and only 28 percent of the U.S. population. Blacks represent 28 percent of the population in Maryland, more than twice the proportion of blacks nationwide, 13 percent. Although Hispanics comprise a smaller percentage of residents in Maryland relative to the nation, the population growth rate of Hispanics continued to climb in Maryland from 5.3 percent in 1997 to 5.8 percent in 1998, as indicated in Figure 2-1, while remaining stable for the country. Hispanics are the fastest growing segment of Maryland's minority population. Both in the U.S. and Maryland, the Asian/Pacific Islander population comprises 4 percent of all residents, and American Indians comprise less than 1 percent of both populations.

HEALTH STATUS AND LIFE STYLE COMPARISONS

In comparing health status and health care expenditures across geographic regions, it is important to note that the relationship between health status and health care utilization is not a simple one. Medical care has been shown to have a positive, but relatively small, impact on the health status of a population.[3] Other factors are more or equally important in the production of health, including education, lifestyle (e.g., smoking, weight, exercise), and environment. Information on smoking behavior is included in this chapter and future reports will address weight and other "risk factors."

Statewide and nationally, most pregnant women begin receiving care in their first trimester, as reported in Table 2-1. Although **children** born in Maryland are at a relative advantage, the state rates declined between 1997 and 1998, narrowing the gap with the rest of the country. The rates for Maryland and the United States differ by only 1 percent, with 83.6 percent of pregnant women in the state receiving care in the first trimester compared to 82.8 percent for the nation as a whole. Likewise, the percentage of low birth weight babies does not substantially differ between Maryland and the rest of the nation, and the rates remain virtually unchanged from 1997. In both Maryland and the U.S., there are proportionately about twice as many African-American babies with low birth weights relative to white babies. The mortality rate for white infants is 8 percent lower in Maryland than in the U.S., with a state rate of 5.5 per 1,000 live births versus a national rate of 6.0 per 1,000 live births. However, Maryland's African-American infant mortality is 10 percent higher than the national rate. The gap has narrowed since last year because of a decrease of deaths in Maryland. (See text box at end of subsection for more information on infant mortality).

[3] For example, Austin et al. (1969) and Hadley (1982) found that a 10 percent increase in per capita medical care expenditures produced less than a 2 percent decrease in adult mortality rates.

TABLE 2-1: MARYLAND HEALTH-RELATED DATA COMPARED TO U.S. AVERAGES

	CHARACTERISTICS	*Ref. No.**	*MARYLAND*	*U.S.*
DEMOGRAPHICS	Total resident population (in 1,000), 1998	1	5,135	270,299
	Under age 5 population (as % of total), 1998	1	6.7	7.0
	Age 65+ population (as % of total), 1998	1	11.5	12.7
	Non-white & Hispanic population (as % of total), MD 1998, US 1998	2	35.2	27.7
	Metropolitan population (as % of total), 1998	3	91.9	80.7
HEALTH STATUS	Low birth weight babies (% of): White Rate	4; 5	6.4	6.5
	and African Amer. Rate, 1998		13.1	13.0
	Infant mortality rate: White Rate, 1998	4; 5	5.5	6.0
	and African Amer. Rate, 1998		15.5	14.1
	Prenatal care in first trimester (% of births with care data), 1998	4; 5	83.6	82.8
	Vaccine coverage for children 19-35 mos. (% of), 1998	6	79	81
	Smokers among adult population (% of) 1998	7	22.4	22.9
	AIDS cases reported per 100,000 pop., 1998	8	31.9	17.1
HEALTH CARE COVERAGE & ECONOMIC INDICATORS	Total uninsured (% of pop.), 1996-98 average	9	13.8	16.0
	Nonelderly insurance status (% of pop.), 1995-97 average	10		
	Total private (% of pop.)		76.9	70.7
	Medicaid & other public (% of pop.)		7.8	11.4
	Uninsured (% of pop.)		15.3	17.8
	Uninsured by race (%), (White/Minority), 1995-97 average	10	9.6/21.2	11.8/26.2
	Medicare beneficiaries 65+ w/private health coverage (%), 1995-97	10	73.9	65.8
	Disabled Medicare beneficiaries <65 (%), 1998	10	10.9	12.8
	Medicare beneficiaries with Medicaid (%), 1995-97	10	11.1	13.6
	Total enrollment in HMOs (as % of pop./ insured pop.), 1998	11	34.9/40.5	29.2/34.7
	Poverty rate, 1996-1998 average	12	8.6	13.2
	Unemployment rate (% of civilian labor force), 1998	13	4.6	4.5
	Personal income per capita, 1998	14	$30,023	$26,482
	Median family income, 1995-97	10	$55,702	$42,471
	Persons w/family income below national median: % uninsured 1995-97	10	28.3	27.3
	Persons w/family income above national median: % uninsured 1995-97	10	7.2	8.4
	Cost of employment-based family health coverage, 1996:	15		
	Total premium (average per employee)		$5,070	$4,953
	Employee contribution (average per employee)		$1,647	$1,439
RESOURCES AVAILABLE	Health care employment (as % of total jobs in state), 1998	10	8.4	7.9
	Primary care physicians** per 100,000 population, 1997	16	103	84
	Physician specialists** per 100,000 population, 1997	16	208	145
	Physicians in residency per 100,000 population, 1998	17	45	36
	Physician assistants per 100,000 population, 1999	18	19.7	12.6
	Registered nurses per 100,000 population, 1998	10	845	829
	Providers who accept Medicare fee as full payment (% of), 1998-1999	19	91.7	84.6
	Population underserved by primary care MDs (% of), 1999	10	2.2	9.6
	Occupancy rate in community hospitals, 1997	18	67.6	61.8
	Nursing facility occupancy rate (median) , 1998	20	88	90
UTILIZATION OF SERVICES	Average stay in community hospitals, 1997 (in days)	18	5.5	6.1
	Admissions to community hospitals per 1,000 population, 1997	18	111.9	118.0
	Outpatient visits (incl. ER) to all hospitals per 1,000 population, 1997	18	1063.7	1681.9
	Emergency room visits to community hospitals per 1,000 pop., 1997	18	316.3	346.8
	Surgical operations in all hospitals per 1,000 population, 1997	18	100.0	90.4
	Retail prescription drugs per resident (average #), 1998	21	7.8	9.0

* References are in Technical Notes Section in Appendix B of this report.

** Count of nonfederal physicians (MDs or Osteopaths) in patient care: primary care is general or family practice, general internal medicine and general pediatrics; specialists are all other types of specialties, including OB/GYN.

Table 2-2, includes the top **causes of death** in Maryland and compares the state and national age-adjusted rates for 1997. Compared to 1996, the actual (unadjusted) rates for eight causes of death decreased: malignant neoplasm, cerebrovascular disease, accidents, diabetes, homicide, HIV, chronic liver disease, and nephritis. Actual rates increased for three other causes: heart disease, chronic pulmonary disease, and suicide. The actual rate for pneumonia/influenza was the same in both 1996 and 1997. These general patterns are also manifested in the regional death rates (Chapter 4 provides more detail and compares regions within Maryland). With the exception of homicide, the state's age-adjusted rates are lower than its unadjusted death rates.

TABLE 2-2: TOP CAUSES OF DEATH AND DEATH RATES FOR MARYLAND AND THE U.S. - 1997

CAUSE OF DEATH	*MD RATES Per 100,000 Population*	*MD AGE-ADJUSTED RATES Per 100,000 Population*	*US AGE-ADJUSTED RATES Per 100,000 Population*
Malignant neoplasm	198.8	133.9	125.6
Diseases of the heart	235.7	128.3	130.5
Cerebrovascular disease	51.2	25.3	25.9
Accidents and adverse effects	26.9	21.9	30.1
Chronic pulmonary disease	35.6	20.0	21.1
Diabetes mellitus	27.4	17.1	13.5
Pneumonia & influenza	28.5	13.2	12.9
Homicide	10.9	12.1	8.0
HIV	11.6	10.1	5.8
Suicide	10.2	9.3	10.6
Chronic liver disease & cirrhosis	8.1	6.4	7.4
Nephritis	9.2	5.1	4.4

Source: Maryland Department of Health and Mental Hygiene, Division of Health Statistics. *Maryland Vital Statistics Annual Report 1997*. Baltimore MD, 1999. Hoyert DL, Kochanek KD, and Murphy SL. Deaths: Final Data for 1997. *National Vital Statistics Reports*, (47:19). Hyattsville MD: National Center for Health Statistics. June 30, 1999. Note: Age-adjusted rates were computed by the direct method. The rates were standardized to the 1940 U.S. population and are expressed as rates per 100,000 population.

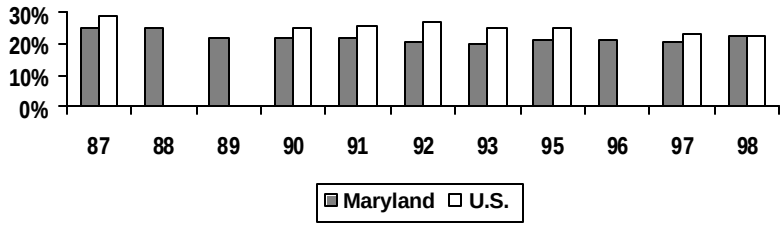
For six of the twelve top causes of death in 1997, Maryland's age-adjusted rates were lower than those experienced by the nation. In general, the state's mortality rates are lower than the national averages for causes that are most directly influenced by preventive efforts. Relative to the United States, Maryland experienced fewer deaths from accidents and adverse effects (27.2 percent), chronic liver disease and cirrhosis (13.5 percent), suicide (12.3 percent), chronic pulmonary diseases (5.2 percent), cerebrovascular disease (2.3 percent), and diseases of the heart (1.7 percent). However, Maryland's age-adjusted rates exceeded the nation's for the remaining six causes of death. The greatest differential, 74.1 percent, occurred in the mortality from HIV infection. The homicide rate in Maryland surpassed the nation by 51.3 percent, and there were 26.7 percent more deaths from diabetes in Maryland relative to the U.S. in 1997. The state's rates for some causes of death – such as diabetes, homicide, specific types of cancer, and HIV infection – are higher than the national average, in part, because these diseases are more prevalent among African-Americans compared to whites, and African-Americans are more than twice as common in Maryland as they are nationwide.

The rate of **AIDS cases** reported in Maryland during 1998 shown in Table 2-1, was the fourth highest in the nation and exceeded the U.S. rate. In both 1997 and 1998, the number of Maryland AIDS cases reported for women was the fourth highest in the U.S. and 1.4 times greater than the national average. The state's rate for men was 1.62 times higher than the rest of the country. Nevertheless, the overall number of cases reported statewide fell by 12 percent from the corresponding 1997 level.[4] In contrast to AIDS, Maryland's smoking prevalence among adults in 1998 is slightly better than the national average. More information on smoking trends in Maryland and the U.S. and information on sexually transmitted disease rates is provided in the text boxes that follow.

Smoking

Figure 2-2 presents the percentage of adult smokers in Maryland and the United States between 1987 and 1998. In 1998, 22.4 percent of Maryland adults were current smokers, an increase of 7 percent from 1997. Despite the general tendency to begin tobacco use before the age of eighteen, most tobacco-related diseases do not appear until mid-life or later. Among all causes of morbidity and premature mortality in the United States, cigarette smoking is the most preventable. The use of tobacco is responsible for more illnesses and deaths than the combination of AIDS, car accidents, homicide, suicide, fires, alcohol, and all illegal drugs.[1] Neoplasm, heart disease, stroke, and chronic pulmonary disease are among the top causes of death in Maryland and all are tobacco-related. Smoking also increases the risk of amputation due to diabetes.

Figure 2- 2: Current Cigarette Smoking Prevalence (%) Among Maryland & U.S. Adults Aged 18 and Older



Maryland Source: Behavioral Risk Factor Surveillance System 1987-1993, 1995-1998. Note: Current Cigarette Smokers were persons aged 18 or older who reported ever smoking at least 100 cigarettes in their lifetime and currently smoke every day or some days. U.S. Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey 1987, 1990-1995; Behavioral Risk Factor Surveillance System 1997-1998.

In the summer of 1999, Governor Parris N. Glendening announced a $1 billion, 10-year program to fund cancer research, prevent adolescents from smoking, and assist state tobacco farmers to raise other crops. This program represents a substantial portion of the national tobacco lawsuit settlement received by the state. Plans include the allocation of $500 million to the support of cancer research – primarily to the University of Maryland and Johns Hopkins University – and for cancer prevention programs. An additional $300 million will be committed specifically to smoking education, prevention, and cessation programs in an effort to decrease the number of smokers in the state, with special emphasis on young people and minority communities.

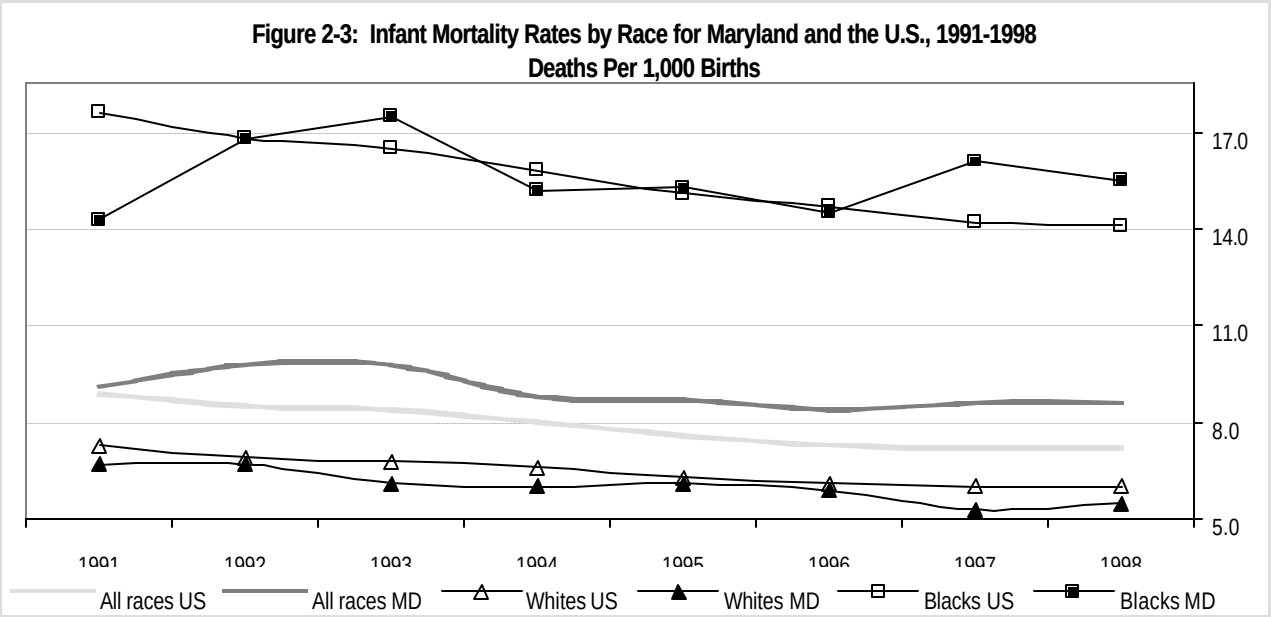
References: American Lung Association, Epidemiology and Statistics Unit. *Trends in Cigarette Smoking*. December 1998. Lynch BS, Bonnie, RJ. Eds. *Growing Up Tobacco Free: Preventing Nicotine Addiction in Children and Youth*. Washington DC: National Academy Press, 1994. Maryland Department of Health and Mental Hygiene. Governor Glendening Announces a $1 Billion, 10-Year Anti-Cancer, Anti-Smoking Program. Press Release, Baltimore MD, June 3, 1999.

[4] Source: Table Reference No. 8.

Health Status Among Infants

Figure 2-3 indicates that the overall infant mortality rate for Maryland remains higher than the U.S. rate. This phenomenon is mainly due to the high mortality for African-Americans (Table 1) who comprise a larger percentage of state residents than the national average. Within Maryland, the disparity between whites and blacks narrowed between 1997 and 1998 because of the increase in white infant mortality and the decrease in black infant mortality. However, mortality for black infants in Maryland was 2.8 times higher than mortality for white infants in 1998. Figure 2-3 shows the general decline in death rates for both white and black infants over the past decade and reveals a more consistent decline for whites.

Figure 2-3: Infant Mortality Rates by Race for Maryland and the U.S., 1991-1998
Deaths Per 1,000 Births



Sources: Table Reference No. 4 and 5; Hoyert D.L., Kochanek M.A., and Murphy S.L., "Deaths: Final Data for 1997," National Vital Statistics Reports, (47:19). Hyattsville MD: National Center for Health Statistics. 1999; Maryland Department of Health and Mental Hygiene, Division of Health Statistics. Maryland Vital Statistics Annual Report 1997. Baltimore MD 1999. NOTE: 1997 rates are revised figures and differ from those reported last year.

In 1998, the top three causes of infant mortality, accounting for 45 percent of all deaths, were disorders relating to short gestation and unspecified low birth weight, congenital anomalies, and sudden infant death syndrome (SIDS). The leading causes of death differed for white and black infants. For white infants, mortality was most likely due to congenital anomalies, followed by low birth weight, respiratory distress syndrome, and maternal complications. For black infants, mortality was mainly attributable to low birth weight, SIDS, and congenital anomalies. Relative to 1997, there was a significant decline in the black infant mortality rates for the Baltimore Metropolitan Area and Baltimore City. This reduction was primarily due to a decrease in the number of deaths related to low birth weight, congenital anomalies, and heart disease. Within the last decade, the state's white infant mortality rate has tended to be below the national rate. Black infant mortality in Maryland has been more variable, but exceeded the national black infant mortality rate in four of the past eight years: 1993, 1995, 1997, and 1998.

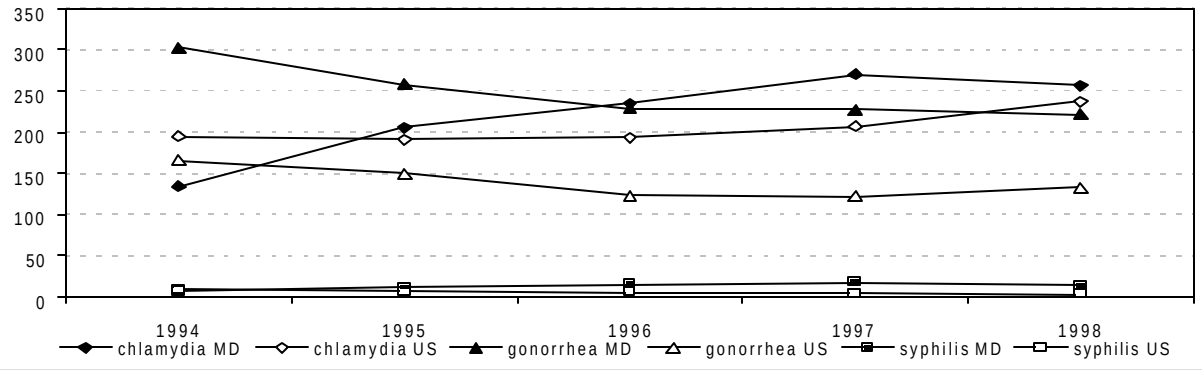
Reference: Maryland Department of Health and Mental Hygiene, Vital Statistics Administration. *Infant Mortality in Maryland 1998*. Baltimore MD 1999.

Sexually Transmitted Diseases

Sexually transmitted diseases (STDs) have national health care repercussions because they are associated with morbidity, mortality, and cost. Federally-funded control programs and national surveillance data exist for three of these diseases: chlamydia, gonorrhea, and syphilis. Infections caused by chlamydia and gonorrhea result in pelvic inflammatory disease, an important precursor of infertility, ectopic pregnancy, and chronic pelvic pain. Additionally, there is evidence that both syphilis and gonococcal infections facilitate the transmission of HIV.[1]

As Figure 2-4 indicates, chlamydia is the most prevalent of all STDs. The reported rates of chlamydia increased between 1987 and 1998, at least partly due to widespread screening, improved reporting, and the recognition of asymptomatic infection. Between 1996 and 1998, the U.S. case rate was highest in the South, the region in which Maryland is categorized. In 1998, the state rate was the thirteenth highest in the nation, 8.7 percent higher than the U.S. rate. Baltimore had the second highest rate of chlamydia, 861.6 (per 100,000 population), among selected cities reported by the CDC for that year. Within Maryland, the second highest concentration of chlamydia occurred in the southern Eastern Shore region, primarily Somerset, Wicomico, Worcester, and Dorchester counties. The rate of the disease in each of these areas exceeded 400. Prince George's County reported a rate of 372.5.

Figure 2-4: Sexually Transmitted Disease Rates Per 100,000 Residents for Maryland & U.S.



Source: Centers for Disease Control, Division of STD Prevention. Sexually Transmitted Disease Surveillance 1998. Atlanta GA, September 1999. Note: U.S. rates include cases reported by Washington D.C. U.S. chlamydia rate for 1994 excludes population of states that did not report (Alaska, Florida, and Mississippi). Syphilis rates include primary and secondary syphilis.

Data indicated a national upswing in the number of gonorrhea cases reported in 1998. Within Maryland, the rate has been decreasing consistently since 1994 and dropped by 2.7 percent between 1997 and 1998. However, the number of reported cases of gonorrhea in Maryland, 220.9 (per 100,000 residents), was the seventh highest in the nation in 1998, 66.2 percent higher than the U.S. Baltimore had the second highest rate of gonorrhea, 1,063.4, among selected cities reported by the CDC for that year. Most of the counties on the Eastern Shore posted rates exceeding 100. In descending order of disease prevalence, these counties are Dorchester, Wicomico, Somerset, Worcester, Talbot, Caroline, and Kent. The rate of the disease in Prince George's county was even higher, 242.5.

Between 1990 and 1998, the national rate of primary and secondary syphilis dropped by 67 percent to 2.6 (per 100,000 population), the lowest rate since reporting began in 1941. Nevertheless, the disease is still prevalent in the South and some urban areas in other regions, especially among African-Americans. The 1998 rate of reported cases of primary and secondary syphilis in Maryland, 12.7 per 100,000 population, was the highest in the nation. Even though a drop of 27.4 percent was observed in that year, the state rate was nearly 4 times the national average. Although the syphilis rate in Baltimore also dropped in 1998, it still reported the highest rate, 69.4, among cities selected by the CDC. Baltimore will receive $400,000 in federal money each year for five years as part of an effort by the CDC to reduce and potentially eliminate syphilis from hard-hit communities. Other areas of high prevalence in 1998 were Eastern Shore counties: Wicomico, Talbot, Somerset, and Dorchester.

References: "Syphilis Cases Down in Baltimore, Nationally." *Baltimore Sun*. October 8, 1999.
Department of Health and Human Services, Centers for Disease Control and Prevention, Division of STD Prevention. *Sexually Transmitted Disease Surveillance, 1998*. Atlanta GA September 1999.

HEALTH CARE COVERAGE AND ECONOMIC FACTORS

Higher levels of income and health care coverage in a population are generally associated with greater health services consumption. Table 2-1 presents data for selected economic variables for Maryland and the nation. Maryland is one of the wealthiest states in the nation. Although the 1998 **unemployment rate** in Maryland was 4.6 percent, virtually identical to the country, the state's **poverty rate** was 8.6 percent, 35 percent less than the nation as a whole. **Per capita personal income** was 13 percent higher than the comparable figure for the nation. Additionally, median family income in Maryland exceeded the U.S. average by 31 percent. **Health care coverage**, one of the most important influences on the demand for health care services, is more common in the state than in the nation, with the state's uninsured rate averaging 13.8 percent from 1996-1998 compared to 16.0 percent for the nation.[5] The proportion of Maryland's population without health insurance has consistently been below the national averages, both for white and black residents. Although the Bureau of the Census identified an increase in the state's uninsured rate for 1997-1998 compared to 1996-1997, the Maryland Department of Health and Mental Hygiene believes the 1998 data for Maryland to be in error, especially with regard to children enrolled in Medicaid.[6] [7] The Behavioral Risk Factor Surveillance Survey (BRFSS) did not find a statistically significant change in the annual uninsured rate among adults from 1996 through 1998.[8]

Maryland residents as a whole are more likely to be insured than the typical U.S. resident but **health care coverage among racial and income groups** varied greatly during 1995-1997. White residents of Maryland were 19 percent less likely to be uninsured than the average white U.S. resident with uninsured rates of 9.6 versus 11.8 percent. Within Maryland and the U.S., minorities were 1.2 times more likely to be uninsured than whites. Minorities who resided in Maryland, like their white counterparts, were 19 percent less likely to be uninsured than minorities who lived elsewhere in the country. The benefit of residing in Maryland with regard to insurance coverage also varies with income level. Specifically, individuals with family incomes that were *above* the national median were more likely to be insured if they were residents of Maryland while state residents with family incomes *below* the national median were less likely to be insured compared to the nation as a whole.

Different types of insurance vary in the **range of services covered, rate of reimbursement** to health care providers, and **access to care** for enrollees. For example, Medicare does not cover prescription drugs, so Medicare beneficiaries must either pay out-of-pocket for drugs or purchase supplemental insurance that provides a drug benefit. Medicaid covers the broadest scope of services (e.g., long-term nursing home care) and does not require patient co-pays, however Medicaid's reimbursement rates are so low that many practitioners do not treat Medicaid patients. In the private sector, HMOs offer lower patient co-payments and a benefit package that includes services not traditionally covered by fee-for-service indemnity insurance, such as annual physicals, well child care, screening tests, and outpatient prescription drug coverage. Because HMOs routinely provide preventive services and outpatient drugs, these benefits are now often included in other private insurance plans.

The **proportions of the population with different types of insurance coverage** differ in Maryland and the nation as a whole, as shown in Table 2-1. Although most individuals below the age of 65 are privately insured, the proportion is 9 percent higher in Maryland compared to the national average. The general prosperity of state residents makes them 32 percent less likely to be enrolled in Medicaid than the U.S. population. The majority of the elderly supplement their Medicare coverage with private insurance coverage to cover Medicare co-payments and deductibles and Maryland beneficiaries are 12 percent more likely to have this supplemental "Medigap" coverage than their national counterparts. Reflecting the state's prosperity, a

[5] According to the Bureau of the Census, accurate health insurance data using the Current Population Survey (CPS) for states requires a 2 or 3-year average. For comparison purposes, Table 2-1 contains 3-year averages for both Maryland and the U.S., which had a 1998 uninsured rate of 16.3 percent. The 1995-1997 insurance status data in Table 2-1 was constructed prior to the release of 1998 data.

[6] Source: Table Reference No. 10, p.7; statistically significant at the 90-percent confidence level.

[7] "Department Blasts Census." *Montgomery Journal.* October 29, 1999 A9. Census officials defended their figures but are double-checking the CPS data collection process.

[8] Unpublished data analysis by MHCC, 1999.

lower percentage of Maryland Medicare beneficiaries are enrolled in Medicaid compared to the national average. The total percentage of beneficiaries with supplemental insurance, (private and Medicaid) is higher in Maryland than nationwide: 85 versus 79 percent. The high percentage of Maryland beneficiaries with supplemental insurance should result in reduced out-of-pocket expenditures for state residents relative to beneficiaries nationwide. Additionally, disabled, non-elderly enrollees are less common among the state's Medicare beneficiaries relative to the national average. (Information on insurance coverage in poor children and non-elderly adults is included in a text box at the end of this subsection.)

Maryland's **HMO enrollment** continues to be among the highest in the nation with 35 percent of all residents - approximately 1.8 million persons - served by HMOs in 1998 compared to 29 percent of the total population nationwide, as shown in Table 2-3. This table also shows that HMOs served 40.5 percent of Maryland's *insured* residents in 1998 compared to 34.7 percent nationwide. (Trends in HMO market share over the past three years is included in a text box at the end of this sub-section.)

Enrollment in HMOs by state residents increased 5 percent overall in 1998, with an estimated 85,000 new HMO enrollees, compared to 1997's annual increase of 10.1 percent. Increased HMO enrollment in the public sector accounted for all of the growth. Although enrollment in Medicaid in 1998 was nearly identical to 1997's figure, enrollment in Medicaid HMOs – referred to as Managed Care Organizations (MCOs) – doubled.[9] This shift of enrollees from fee-for-service Medicaid into HMOs occurred due to the state's HealthChoice Program, which requires persons in specific eligibility categories to receive most of their services from MCOs. The number of residents enrolled in Medicare HMOs increased by 4,000, nearly half of the total growth in Maryland Medicare enrollment. In the private sector, total HMO enrollment appeared to decline slightly. However, because HMO estimates of their enrollees can vary from year to year and by source, it is unclear if this small decline is accurate or an artifact of definitional differences.[10] Nationwide, enrollment in HMOs grew by 9.4 percent, nearly twice Maryland's increase of 5 percent. However, like Maryland, growth nationwide slowed in 1998 from the enrollment increases seen in 1996 and 1997 of 18.5 and 15.5 percent, respectively. According to an InterStudy report, this general slowdown in HMO enrollment growth is associated with an increase in commercial premiums and a lack of growth among the largest health plans.[11] The report estimates that growth in traditional HMO commercial products has declined by about half of 1 percent for each 1 percent increase in the family premium. (Aside from the largest plans, HMOs reported nationwide enrollment increases in 1998 consistent with past years). InterStudy predicts that industry enrollment will continue to slow as HMOs seek to improve their fiscal health with increased premiums.

TABLE 2-3: HMO MARKET SHARES IN MARYLAND AND THE U.S. - 1998

CATEGORY	PERCENTAGE OF CATEGORY ENROLLED IN HMOs	
	MARYLAND	U.S.
All residents	34.9 %	29.2%
Insured residents	40.5	34.7
Publicly insured	36.6	33.1
Medicare	12.6	16.3
Medicaid	71.5	53.6
Privately insured	44.1	N/A

Source: Table Reference No. 11; Health Care Financing Administration. *Medicare Enrollment Trends 1966-1998*, June 30, 1999; Health Care Financing Administration. National Summary of Medicaid Managed Care Programs and Enrollment, June 30, 1997; February 27, 1998; Health Care Financing Administration. *Medicaid Managed Care State Enrollment - June 30, 1998*; April 8, 1999.

[9] 1998 enrollment in Medicaid would have declined were it not for the *Maryland Children's Health Insurance Program*, which began in July 1998 and enrolls children with family incomes up to 200 percent of poverty. These children are enrolled in MCOs and therefore contributed to the increase in Medicaid HMO enrollment during 1998.

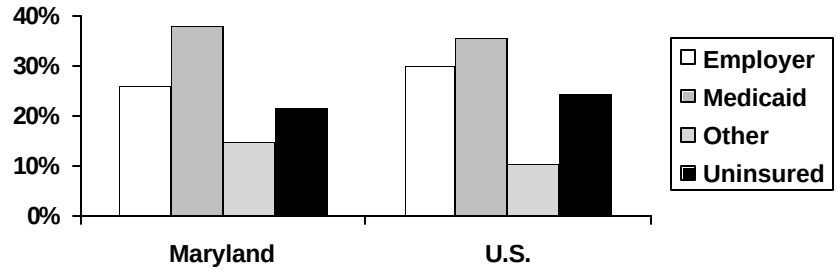
[10] See text box on HMO market share for information on differing definitions of HMO enrollees

[11] *The InterStudy Competitive Edge, 9.2; Part II: HMO Industry Report.* Minneapolis MN, 1999.

Insurance Coverage for Children in Poverty

Figure 2-5 compares the insurance coverage of children living in poverty in both Maryland and the U.S. between 1995 and 1997. Maryland's poor children were more likely to be insured than the typical child in the U.S was. However, compared to the rest of the nation, Maryland's poor children were less likely to have employment-based insurance and were more likely to be covered by Medicaid and other insurance (Medicare, CHAMPUS, individually purchased private insurance).

Figure 2-5: Insurance Coverage of Children Under Age 19 and Below 200 Percent of Poverty 1995-1997



Source: Lamphere J, Brangan N, Bee S, Griffin K. *Reforming the Health Care System: State Profiles 1999.* Washington, D.C.: Public Policy Institute/American Association of Retired Persons, 1999 (forthcoming).

Factors Associated With Health Insurance Coverage In Non-elderly Adults

A recent analysis of the 1996 and 1997 Maryland Behavioral Risk Factor Surveillance Survey (BRFSS) by MHCC provides a detailed analysis of uninsured, non-elderly adults in Maryland and also addresses the relationship of insurance to health status and use of selected health services, such as check-ups and screening procedures.[1] Some of the many findings from this study are listed below.

- **Age is inversely related to insurance coverage**. Young adults from 18 to 24 are more likely to lack health insurance than any other age group. They comprise 13 percent of the total population but account for 25 percent of the uninsured.
- **Two-thirds of uninsured non-elderly adults have jobs.** The majority of uninsured are employed for wages, but the self-employed are at greater risk of lacking insurance. One-fifth of the self-employed have no insurance, and the only group with a higher uninsured percentage is the unemployed at 44 percent. In the working population the self-employed are 4.7 times more likely to lack health insurance than are wage/salary employees.
- **Nearly one-quarter of the uninsured have household incomes of $25,000-34,999.** Another 30 percent have incomes of $35,000 or more, with half (15 percent) having incomes of $50,000 and higher.
- **Minorities are twice as likely to be uninsured as are white, non-Hispanic residents.** Compared to their representation in the general population, minorities comprise a higher percentage of the uninsured at every income level.
- **The uninsured are less healthy and are less likely to obtain preventive health services.** Uninsured adults are about 1.8 times more likely to report fair or poor health status than the insured, and are more than twice as likely to not have received a checkup, Pap smear, or physical breast exam in the past two years. However, the vast majority of uninsured adults report themselves to be in good to excellent health, and the majority of uninsured had a check-up within the past year and a breast exam and Pap smear within the past two years.
- **Insurance is no guarantee of access.** Insured adults account for four-fifths of non-elderly adults who went without a check-up in the past year, and the majority of those who did not obtain needed care for reasons of cost had health insurance.

Reference: Maryland Health Care Commission. *Health Insurance Coverage in Maryland Adults: Demographic, Health Status, and Access to Care Differences*. Baltimore MD, October 1999.
See http://www.mhcc.state.md.us/database/exputil1997/brfs_report.pdf

Trends in HMO Market Share

Figure 2-6a shows the percent of the population enrolled in HMOs, and Figure 2-6b shows the HMO market share among only the insured over the past three years for Maryland and the U.S. These figures use two-year moving averages to dampen the impact of variation resulting from definitional changes in who health plans count as HMO enrollees in the annual filings they submit to state insurance agencies.* Between 1996 and 1998:

- The proportion of U.S. residents enrolled in HMOs grew from 22.1 percent to 28.1 percent, an expansion of 27.1 percent over the three-year period.
- The proportion of Maryland residents enrolled in HMOs increased from 29.8 percent to 34.2 percent, an expansion of 14.8 percent.
- The expansion in HMOs' share of the insured over these three years differs slightly from the growth percentages reported for all residents due to changes in the percentage of residents without insurance.

While HMOs' market share continued to climb over the past three years, the rate of growth – as measured by the proportional (percentage) increase in market share – slowed in some cases. Compared to a growth factor of 15.3 percent in HMOs' share of the insured market nationwide from 1995-1996 to 1996-1997, HMOs' share of the insured expanded by a smaller factor, 10.6 percent, in the period 1997-1998. In Maryland, the growth factor for HMOs share of the insured market increased from 6.1 percent in 1996-1997 to 7.6 percent in 1997-1998. Growth in the percentage of all Maryland residents enrolled in HMOs was 7.0 and 7.1 percent respectively for 1996-1997 and 1997-1998.

Figure 2-6a: Percent of the Population Enrolled in HMOs in Maryland and the U.S. 1996-1998: Two-Year Moving Averages

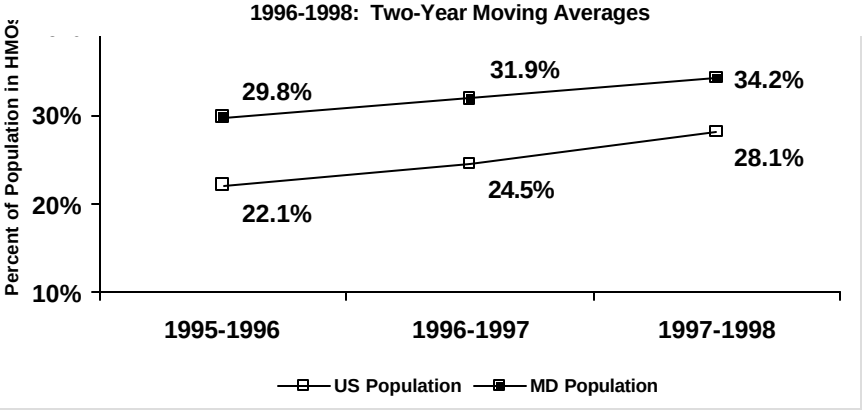
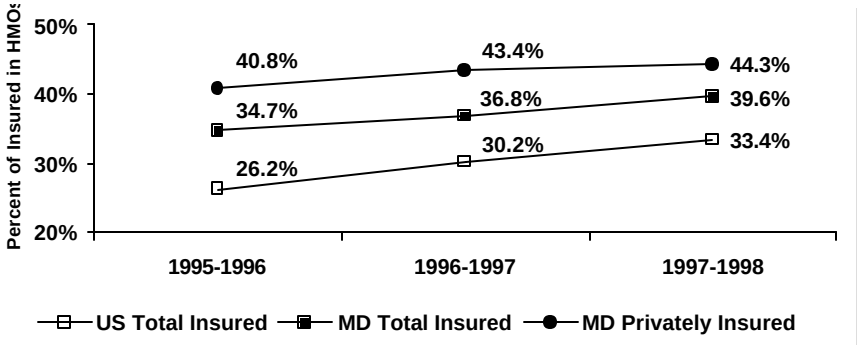


Figure 2-6b: Percent of the Insured Enrolled in HMOs in Maryland and the U.S. 1996-1998: Two-Year Moving Averages



Source: Table Reference No. 11.

* InterStudy has investigated instances in which the number of "HMO enrollees" reported to them by health plans differs from the number of HMO enrollees reported by the plans on annual filings submitted to state insurance agencies. They found that that some HMOs do not include "point-of-service" (POS) enrollees in their annual filings but do report these POS enrollees in their HMO enrollee count to InterStudy. An example is CIGNA, who reported enrollees in their "Flexcare" product – a type of POS – to InterStudy but did not include them in their annual HMO filing because coverage for these enrollees is underwritten by the insurance side of their business rather than the HMO side. Also, some health plans serve as third party administrators for companies who self-fund some or all of their employee health coverage. It is unclear if these employees – who believe themselves to be HMO enrollees – are reported by health plans as HMO enrollees in their annual filings.

Trends in HMO Market Share (cont.)

HMOs' market share has increased more rapidly for particular sectors of the insured population, as shown in Figures 2-6b and 2-6c. (Figure 2-6c does not use two-year running averages because enrollment numbers in public programs are generally not subject to the definitional problems found in numbers reported for the privately insured.) For instance, between 1996 and 1998:

- HMOs' share of U.S. Medicare beneficiaries grew from 11.0 to 16.3 percent of beneficiaries, increasing their market share by a factor of 48.2 percent.
- HMOs' share of Maryland Medicare beneficiaries grew by a factor of 129 percent, increasing from 5.5 to 12.6 percent of beneficiaries.

Even though the HMO share of the Maryland Medicare market increased during the three-year period, HMO market share of Medicare beneficiaries in Maryland is still below the national average.

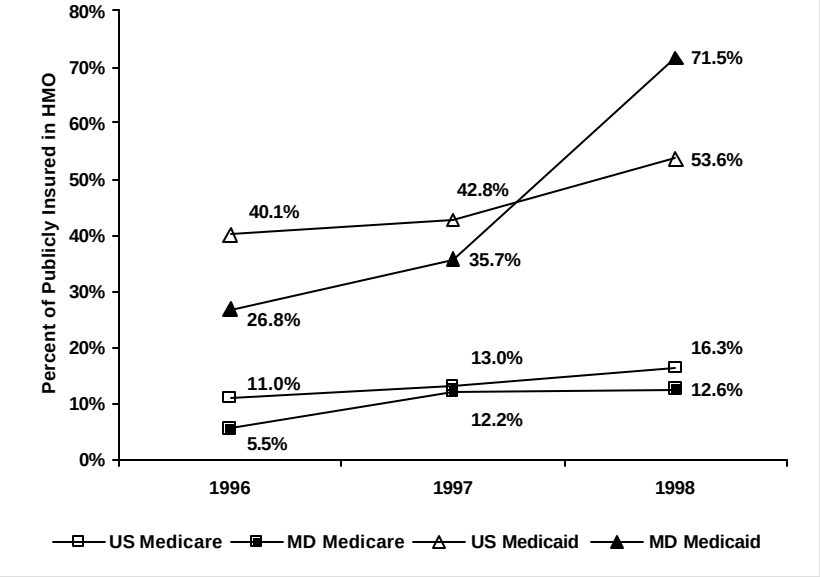
The state experienced its most dramatic growth in HMO enrollment within its Medicaid population. Between 1996 and 1998:

- There was a 33.7 percent rate of growth in the HMO share of Medicaid enrollees nationally.
- There was a 167 percent rate of growth in the HMO share of Medicaid enrollees in Maryland.

As the figure below indicates, Maryland surpassed the U.S. average in 1998, with nearly three-quarters of its Medicaid beneficiaries enrolled in HMOs subsequent to the implementation of HealthChoice.

HMO market share among Maryland's privately insured population has increased much more slowly relative to growth rates in the public market. The proportion of Maryland's privately insured residents enrolled in HMOs increased from 40.8 percent to 44.3 percent, an expansion of 8.6 percent in HMO market share for this population. (HMO market share for the privately insured nationwide cannot be determined with available data.)

Figure 2-6c: Percent of the Publicly Insured Enrolled in HMOs in Maryland 1996-1998



Source: Table Reference No. 11; Health Care Financing Administration. *Medicare Enrollment Trends 1996-1998*, June 30, 1999; Health Care Financing Administration. *National Summary of Medicaid Managed Care Programs and Enrollment, June 30, 1997*; February 27, 1998; Health Care Financing Administration. *Medicaid Managed Care State Enrollment - June 30, 1998*; April 8, 1999.

RESOURCE AVAILABILITY

The supply of health care resources affects utilization. As indicated in Table 2-1, the proportion of health care jobs in Maryland is slightly higher than the comparable U.S. figure. The state's supply of primary care physicians per 100,000 population increased by 6.2 percent from 97 per 100,000 in 1996 to 103 per 100,000 in 1997. The state maintained its rank as the third highest in the nation in its supply of primary care physicians in 1997, exceeding the national supply of 84 per 100,000 by 22.6 percent. Additionally, the concentration of physician specialists in the state is 43 percent greater than the corresponding national figure, even though the proportion of physician specialists decreased both in Maryland and the U.S. in 1997. (Information on the supply of particular specialists in Maryland is provided in Table 4-2.) Physician supply is not expected to change much in the near future because the number of residents remained virtually unchanged from 1996 to 1997 for both the state and the nation. Additionally, Maryland's proportion of physician assistants and registered nurses exceed national averages. Occupancy rates – which indicate bed availability – have remained relatively stable between 1996 and 1997. The occupancy rate in community hospitals in 1997 is unchanged for both Maryland and the nation. However, there was a slight decrease in the 1997 nursing facility occupancy rate for Maryland compared to 1996. Retail prescription drug use appears to be lower among Maryland residents than the national average. However, because this rate reflects only prescriptions sold within Maryland, it does not capture prescriptions purchased by state residents in other jurisdictions such as the District of Columbia or Delaware. Because a significant portion of residents work outside the state, it seems likely that Maryland's rate is somewhat higher.

PHYSICIAN PRACTICE STYLE

The fifth variable group, physician practice patterns, has a significant effect on the types and amounts of resources used to treat similar conditions. Common examples of differences in practice style include the variations in the use of clinical guidelines for disease screening and immunization reported by different HMOs treating similar patient populations, and the use (or non-use) of different prescription drugs to treat the same condition including the often reported over-prescribing of antibiotics. Another example is seen in the Cesarean birth rate, which is higher in the U.S. than in Western Europe where birth outcomes are at least as favorable. Women undergoing Cesarean delivery have higher rates of infection and take longer to heal than women who have vaginal deliveries, and are also more likely to experience complications in later pregnancies from an increased risk of abnormal placentation and ectopic pregnancy and repeat Cesarean delivery. A study of efforts in a Chicago hospital to reduce the Cesarean rate by changing physicians' practice styles found that the hospital was able to achieve significant declines in the rates while simultaneously reducing the perinatal mortality rate by 47 percent.[12] Another recent study found Cesarean section rates vary by type of hospital: private, nonteaching hospitals had Cesarean rates for Medicaid-insured women 2 to 2.5 times greater than public hospital rates, with the lowest rate occurring among private teaching and HMO-owned hospitals.[13] Although this study did identify the sources of this systematic variation in physician practice style, physicians are influenced by the practices of other physicians with whom they have frequent contact. Additionally, anecdotal evidence from a large employer's effort to reduce the Cesarean rate indicates that obstetric nurses can play a role in establishing hospital-based rates by exhorting obstetricians to conform to a treatment style used by one or more "venerated" obstetricians who practice at the hospital. These examples illustrate that treatment is clearly influenced by physician practice style.

Factors that influence physician practice style include both sociocultural influences and characteristics specific to the physician.[14] Sociocultural factors include patient demands, local disease rates, and state policies. Physician-characteristics include those specific to the practice of medicine, such as time spent with other physicians and the practice styles of those physicians, and use of information management systems. Additionally, physician-specific characteristics include: age, training and experience; and practice

[12] Socol ML, Garcia PM, Peaceman AM, Dooley SL. Reducing Cesarean births at a primarily private university hospital. *American Journal of Obstetrics and Gynecology*. 1993; 168:1748-1754.

[13] Gregory K et al. Cesarean deliveries for Medicaid patients: A comparison in public and private hospitals in Los Angeles County. *American Journal of Obstetrics and Gynecology*. 1999; 180:1177-1184.

[14] Freed G et al. Adopting immunization recommendations: A new dissemination model. *Maternal and Child Health Journal.* 1998; 2(4), pp 231-239.

management policies, including any requirements of public and private insurers. For example, HMOs' attention to treatment costs, management of specialty care, and physician performance in implementing screening and other treatment standards have influenced physician practice style. HMOs' attention to costs has resulted in all physicians being more cost-conscious in their treatment of patients, regardless of insurance coverage. A study of how HMOs achieve their savings found that managed care capitalizes on differences in practice style associated with specialty. HMO enrollees use midlevel providers and generalists more often and ER and specialist physicians less often. With the exception of ER doctors, the physicians did not appear to alter their treatment practices for the seven study illnesses according to the insurance status of their patients.[15] Additionally, physicians have different levels of ability and expertise, and they differ in their opinions about the effectiveness of therapeutic options, especially when there is little evidence of efficacy.[16]

SERVICE PRICES

The prices of health care services have historically been one of the most important sources of growth in health care spending. The latter half of the 1990s have seen relatively small annual increases in health service prices. October 1997 to March 1998 marked 25-year lows in inflation of key health care indexes.[17] From March to October 1998, however, key health care indices accelerated. Health care prices, as measured by the Consumer Price Index (CPI), had 12-month average price increases of 3.4 percent in December 1998. This increase compares to essentially flat growth of 2.1 percent in the CPI for all items less energy, 1.6 percent growth if energy is included. The individual service indexes with the greatest influence on health care inflation are: physician care (25.7 percent relative importance), hospital care (23.8 percent), dental care (14.5 percent) and prescription drugs (14.5 percent). The faster growth in medical prices in 1998 appears to result from three factors: drug price growth, which accelerated rapidly during 1998 to reach a 12-month rate of 4.9 at the end of 1998; physician care prices, which grew by 3.3 percent; and hospital price growth, which accelerated to 3.2 percent driven mainly by increases in hospital outpatient prices. The increases in prescription drug and hospital prices exceeded the slower price growth of dental care, nursing homes, and home health care services.

Because the CPI reflects prices consumers without insurance would pay, many prefer alternative measures of health care price changes. One alternative, the Producer Price Index (PPI) for health care services also showed accelerated growth for prescription drugs, with 20.9 percent inflation for 12 months as of December 1998. The PPI for prescription drugs was driven primarily by a jump in psychotherapeutic drugs in March 1998. Without psychotherapeutic drugs, the PPI inflation rate was 6.1 percent. The 12-month inflation rates, as of December 1998, for other services are as follows: nursing homes - 4.4 percent; physician care –2.6 percent; hospital care - 1.3 percent; and medical laboratories - 0.2 percent.

Compared to the U.S. city average of a 3.4 percent increase in medical prices as measured by the CPI, the Baltimore/Washington DC Metropolitan Area had a lower rate of inflation, 2.6 percent. The CPI (including energy) for the Baltimore/Washington DC Metropolitan Area grew 2.0 percent in 1998, resulting in a smaller gap between the inflation rate for health care and the overall CPI, 0.6 percentage points, than the average difference nationwide, 1.8 percentage points.

UTILIZATION RATES

Utilization rates reflect the interaction of six influences discussed in the preceding sections. Table 2-1 reports selected hospital and prescription drug utilization rates for Maryland and the U.S. (Hospital-based services and prescription drug sales are currently the only services collected uniformly at state and national levels.) Hospital utilization rates remained relatively stable between 1996 and 1997. The average stay in community hospitals for both Maryland and the U.S. is unchanged from 1996, as is the number of admissions to community hospitals per 1,000 population. Emergency room visits to community hospitals increased slightly for Maryland and dipped somewhat for the U.S., but state-use rates remain less than the national counterpart. Surgical operations in hospitals increased for both Maryland and the nation, although the

[15] Flood AB. et al. How do HMOs achieve savings? The effectiveness of one organization's strategies. *Health Services Research*. 1998; 33(1), pp. 79-99.
[16] Detsky, AS. Regional variation in medical care. *New England Journal of Medicine*. 1995; 333(9), pp. 589-590.
[17] *Health Care Price Index.* Period Publishing, Milliman & Robertson.

Maryland figure is 11 percent higher than the national value. The number of outpatient visits, including emergency room, to all hospitals is 37 percent less in Maryland relative to the nation.

There has been a general increase in the use of prescription drugs nationwide, driven mainly by demand for new drugs that offer either treatment that was previously unavailable (e.g., Viagra) or improvements (e.g., fewer side-effects) over pre-existing pharmaceuticals. Advertising to the general public by pharmaceutical companies to promote use of their new products has helped to fuel this increased demand. Retail prescription drug use in 1998, as reported in Table 2-1, appears to be lower among Maryland residents than the national average. However, because this rate reflects only prescriptions sold within Maryland, it does not capture prescriptions purchased by state residents in other jurisdictions, such as the District of Columbia or Delaware. Given the significant portion of residents who work outside the state, it seems likely that Maryland's rate is somewhat higher than this. Managed care's emphasis on preventive and ambulatory care, relative to traditional indemnity insurance, is an approach that seems likely to increase the use of prescription medication, especially when coupled with insurance coverage for outpatient prescriptions.[18] Given the higher population percentage enrolled in HMOs in Maryland compared to the national average, the expectation would be for relatively greater use of prescription drugs by state residents. Although the state rate reported in Table 2-1 seems likely to be an underestimate, the rate of change in this measure, relative to changes in the national rate, will be useful to monitor in future years.

COMPARING MARYLAND TO OTHER STATES

This year, Morgan Quitno[19] ranked the states by comparing them to the national average using a formula with 21 component factors. Low ranks were assigned to states that fell below the national average, and high-ranking states exceeded the national average. Due to these changes in methodology, the rankings are not comparable to those assigned in previous years. Two factors were removed from the ranking process this year: percent change in uninsured and hospitals per 1,000 square miles. Also, the age-adjusted death rate by malignant neoplasm was used in lieu of cancer death rate. Maryland received its worst rankings for AIDS, sexually transmitted disease, births of low birthweight, and infant mortality. Its best rankings were for percent of population lacking access to primary care, adults who are binge drinkers and adults who smoke, and number of days in past month when physical health was "not good."

The UnitedHealth Group[20] State health rankings are based on the same methodology used by ReliaStar[21] last year. These rankings are derived from five categories of measures: lifestyle, access, occupational safety and disability, disease, and mortality. Seventeen components make up these five categories. Each component is associated with a weight that represents its contribution to the overall score assigned to a state. Maryland's score in 1999 was basically unchanged from the previous two years and was 1 percent above the national average. The prevalence of smoking increased from 20.9 percent of the population in 1998 to 22.4 percent in 1999, but there were decreases in the risk for heart disease and occupational fatalities. Maryland has remained among the top four states in its support for health care since 1995. Other areas in which Maryland ranks well include adequacy of prenatal care, occupational fatalities, and motor vehicle deaths. Areas in which Maryland ranks near the bottom of all states include: violent crime, infectious disease, infant mortality, and premature death.

Table 2-4 presents the rankings of Maryland and its Border States assigned by the UnitedHealth Group and Morgan Quitno. While the rankings for Maryland and Delaware remain the same as last year, the rankings for the other three states have dropped.

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[18] Lyles A and Palumbo FB. The effect of managed care on prescription costs and benefits. *Pharmacoeconomics*. 1999; 15(2), pp. 129-140.

[19] Morgan K, Morgan, S. Eds. *Health Care State Rankings 1999*. Lawrence, KS: Morgan Quitno Press, 1999.

[20] *United Health Group State Health Rankings*, 1999 edition. Minneapolis, MN: UnitedHealth Group, 1999.

[21] *The ReliaStar State Health Rankings*, 1998 edition. Minneapolis, MN: ReliaStar Financial Corporation, 1998.

TABLE 2-4: HEALTH CARE RANKING OF MARYLAND AND NEIGHBORING STATES

STATE	UNITEDHEALTH GROUP RANKING	MORGAN QUITNO RANKING
Maryland	27	25
Delaware	39	40
Pennsylvania	25	22
Virginia	14	16
West Virginia	45	36
National Norm	29	30-31

CONCLUSIONS

HEALTH STATUS OF MARYLAND RESIDENTS

Over time the general health status of Maryland residents appears to have improved slightly – based on the limited measures examined in this chapter – however, there are some areas that registered declining health, indicating a need for increased intervention. On the positive side, death rates fell in 1997 for eight of the top 12 causes of death – including cancer, stroke, accidents, diabetes, homicide, and HIV. The state was also successful in reducing infant mortality and low-weight births among African-Americans and STD rates for the three most prevalent diseases. Areas needing increased attention include care for infants and young children. Both the vaccine coverage rate and percentage of births with prenatal care in the first trimester declined in 1998 (nationally the vaccine rate improved and the prenatal care measure was stable). Among adult residents, smoking prevalence increased in 1998 – in contrast with a national decline. And heart disease and chronic pulmonary disease (CPD) – which are more prevalent among smokers – had higher death rates in 1997 than in 1996. (Nationally, the death rate for heart disease decreased, while that of CPD increased slightly.) These increased death rates and the higher smoking prevalence in Maryland underscore Governor Glendening's anti-smoking program as a timely and important intervention. The suicide rate also rose in 1997, indicating a need for increased suicide prevention efforts in the state.

Maryland residents as a whole appear to have a slight health advantage over the average American, as reflected in many of the state-to-national comparisons discussed in this chapter, but certain segments of the state's population fare less well than their counterparts nationwide. Compared to national averages, the state has: lower age-adjusted death rates for four of the five causes associated with 20 or more deaths per 100,000 in 1997; slightly higher prevalence of prenatal care in the first trimester of pregnancy; and slightly lower smoking prevalence in adults. A higher proportion of state residents (regardless of race) have health insurance relative to the nation as a whole, and those with insurance are more likely to have private coverage and are less likely to be enrolled in Medicaid. A smaller percentage of state residents live in poverty and those who do are somewhat more likely to be covered by Medicaid than is the national average. Health care professionals – especially physicians – are more abundant in Maryland, and the proportion of residents underserved by primary care physicians was further reduced in 1997 to less than one-quarter of the national measure. In two systems that rank states for health care, Maryland is ranked slightly above the national average, but it falls in the middle of all states due to health problems prevalent in selected segments of the state's population. For instance, some of the state's youngest residents are at a slight disadvantage relative to national norms, as reflected in below-average measures for the vaccination rate and African-American infant mortality. The state's above-average rates for sexually transmitted diseases, and HIV and homicide deaths are health problems more prevalent in its urban and African-American populations. Persons with relatively less family incomes (below the national median) are at a slight disadvantage if they reside in Maryland with regard to having health insurance. (State residents at higher family income levels – above the national median – are more likely to be insured relative to their counterparts nationwide, however.)

IMPACT ON STATE HEALTH CARE SPENDING IN 1998

In light of the information presented in this chapter, there are several differences from 1997 that are likely to occur in the state's health care spending for 1998. Even without changes in health status, treatment patterns, or prices, **the state's total health care spending should increase due to population growth** by at

least 1 percent in 1998. Specifically, the number of elderly increased by 1 percent, as did most other age categories with the exclusion of children under age 5 who declined in number. **There will also be increases in state spending due to increased expenditures per capita.** The forces underlying increased spending per capita include improving health status and service price increases. The improved health status measures noted here – such as lower death rates from cancer and cerebral vascular disease – result from health care treatments that are initiated earlier or use improved technologies (i.e., new drugs and surgical techniques) rather than prevention efforts designed to reduce both disease prevalence and health care costs. Although new technologies may be less expensive than the treatments for which they provide an alternative, they most often supplement what exists – expanding the services used in treatment (e.g., AIDS drugs) or making treatment available to patients unable or unwilling to use prior technologies (e.g., new anti-depressant drugs). Generally the outcome of such changes in treatment is the delivery of more health care and/or more expensive health care to a population, which results in an increase in expenditures per person. Without an extensive study, however, the quantitative impact of improved health status on spending cannot be estimated.

An improved economy and health care price inflation will also contribute to increased spending for health care in Maryland in 1998. The consumption of health services is positively correlated with both income and health care coverage, and although the proportion of the state's population with health insurance in 1998 is not statistically different from 1997, personal income per capita increased by 4.7 percent. This increase provides additional income in excess of the 2 percent increase in consumer prices in the Baltimore-Washington area. The additional income provides more money for co-payments and deductibles and for services not covered by insurance. Based on the change in medical prices in the Baltimore-Washington area in 1998 (as measured by the CPI), medical price inflation is expected to contribute at least a 2.3 percent increase in state health care spending. Large inflation in the prices of prescription drugs and smaller increases in physician and hospital prices drove this increase in medical prices (nationwide). Consequently, the impact of price inflation will be more evident in those payers who purchase relatively more of these particular services. Private insurers (including HMOs) allocate higher shares of their spending to outpatient drugs than do other payers, and therefore will be most affected by drug price inflation, in terms of both increases in total and per capita expenditures and an increase in the proportion of spending allocated to drugs. The nationwide increase in private sector physician prices may not be reflected in Maryland due to aggressive bargaining on the part of Maryland insurers, made easier by the large supply of physicians who are competing with each other for patients. (Price increases in physician prices by the public payers are the result of changes in fee schedules set by Medicare and Medicaid.) The hospital price increases evident nationwide have also occurred in Maryland. Its effect on spending will be most evident in Medicare expenditures, both overall and in the proportion allotted to inpatient care.

The qualitative effect of a simultaneous shift in enrollment – from one payer and/or delivery system to another – on health care spending is more difficult to predict. The additional 8,500 Maryland beneficiaries in Medicare in 1998 are split almost equally between the traditional fee-for-service enrollment, so that the expenditure increases for Medicare will be somewhat less than would be expected given increased enrollment, price changes, and likely increased utilization. Medicaid experienced no increase in enrollment, but there was a dramatic shift of enrollees from the fee-for-service system to HMOs (called MCOs in the Medicaid Program) doubling the proportion of enrollees serviced by HMOs from 36 to 72 percent. Although this would be expected to reduce overall spending by Medicaid, the anticipated savings are more than offset by: increased prices for hospital and prescription drugs, demand for new technologies (including new drugs), payment in 1998 for mental health services that occurred in the last six months of 1997, and high capitation rates. In the private sector, the number of enrollees in each of the delivery systems are nearly the same as in 1997, so increases in expenditures per capita will generally reflect the influences of increased utilization (including increased demand for prescription drugs) and price changes discussed previously. The specific changes in payer expenditure patterns that result from a movement of the insured among payers and a shift of enrollees from the fee-for-service delivery system into HMOs, as well as from the population, income, and price changes discussed above, are presented in the chapter which follows. Chapter 3 quantifies Maryland's health care expenditures in 1998 by type of payer and type of service and compares the level and pattern of expenditures to those that occurred in 1997.